

Serial No. 10/050,600  
Docket No. No. P14979-A  
(YAM.046)

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## AMENDMENTS TO THE CLAIMS

1-2. (Canceled).

3. (Currently Amended) A demultiplexing method of receiving a multiplexed signal obtained by[[:]] multiplexing a plurality of communication signals from a multiplexed signal transmitting section,[[:]] demultiplexing the multiplexed signal into communication signals,[[:]] and transmitting the demultiplexed communication signals to a communication signal receiving section, the method comprising:

adding, to each of the plurality of communication signals, an identification address preassigned to a predetermined signal identifying section through which a communication signal passes in a multiplexing system, including the multiplexed signal transmitting section and the communication signal receiving section, and outputting each of the communication signals;

extracting the identification address from each of the output signals; and

demultiplexing the multiplexed signal for each of the communication signals on the basis of the extracted identification address.

4. (Previously presented) A method according to claim 3, wherein the communication signal includes a PPP packet created for each Internet subscriber apparatus, and the identification address includes a MAC address.

5. (Previously presented) A demultiplexing method of demultiplexing a multiplexed signal obtained by multiplexing a plurality of packets into packets, comprising:

extracting an IP address from each packet in the received multiplexed signal for each of the plurality of packets, the IP address being preassigned to a predetermined signal

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identifying section through which a communication signal passes; and

demultiplexing the multiplexed signal into PPP packets on the basis of the extracted IP addresses.

6-7. (Canceled).

8. (Original) A demultiplexing apparatus which is connected to a multiplexed signal transmitting section through a multiplex communication path, demultiplexes a multiplexed signal received from the multiplex communication path, and transmits demultiplexed communication signals to a communication signal receiving section through communication paths for the respective communication signals, comprising:

address extracting means, connected to the multiplex communication path, for extracting an identification address, for each of the communication signals, which is added to each of the communication signals in the multiplexed signal received from the multiplex communication path and preassigned to a predetermined signal identifying section through which a communication signal passes in a demultiplexing section including said multiplexed signal transmitting section and said communication signal receiving section; and

demultiplexing means for demultiplexing the multiplexed signal into the respective communication signals on the basis of the identification addresses of the respective communication signals which are extracted by said address extracting means.

9. (Previously presented) An apparatus according to claim 8, wherein the communication signal includes a PPP packet created for each Internet subscriber apparatus, and the identification address includes a MAC address.

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10. (Currently Amended) A demultiplexing apparatus which is connected to a multiplex communication path through which a multiplexed signal obtained by multiplexing packets addressed to subscriber apparatuses is transmitted, demultiplexes the multiplexed signal received from the multiplex communication path, and outputs each demultiplexed communication signal, comprising:

address extracting means, connected to the multiplex communication path, for extracting an IP address of each packet, the IP address being preassigned to a predetermined signal section of the multiplexed signal in the multiplexed signal received from the multiplex communication path; and

demultiplexing means for demultiplexing the multiplexed signal into the respective packets on the basis of the IP addresses of the respective packets extracted by said address extracting means.

11. (Previously presented) An access network system comprising:

a plurality of subscriber apparatuses which transmit/receive one of a signal having a MAC address added to a packet and a signal having no MAC address added to a packet;

a subscriber multiplexing/demultiplexing apparatus which multiplexes packets in signals transmitted from said respective subscriber apparatuses on the basis of MAC addresses added to the packets or IP addresses of the packets, and demultiplexes an input multiplexed signal into packets on the basis of one of a MAC address added to each packet and an IP address of each packet; and

a protocol termination apparatus which includes a first interface block which interfaces with a backbone network, second and third interface blocks which interface a multiplexed signal with said subscriber multiplexing/demultiplexing apparatus, switching means, and PPP processing means,

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wherein said protocol termination apparatus, when a packet in a multiplexed signal  
received from said subscriber multiplexing/demultiplexing apparatus through said second

interface block includes a data packet said protocol termination

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